ENGINE **CONTROLLER** HIGH SPEED OVERSIGHT UNIT

ECHO

Quick Start Guide Ver 01
10 August 2020

ECHO-A				
Power Connection	**Nominal**	**max**	**min**	**Connector Type**
Power Supply	5V DC	5.25	4.5	USB-C
Power Consumption	10W	15	0.9225	
Ethernet Connection				
Suggested Adapter				USB 3.0
MAIN 50 PIN CONNECTOR	**Nominal**	**mx**	**min**	**PIN #**
CRANK+ (*)	5V	2.2 .. 5.5V	-0.5 .. 1.5V	2
CRANK -	GND			4
CAM + (*)	5V	2.2 .. 5.5V	-0.5 .. 1.5V	6
CAM -	0V			7
AI0+	0 .. 10V	15	0	50
AI0-	-10 .. 0V	0	-15	49
AI1+	0 .. 10V	15	0	48
AI1-	-10 .. 0V	0	-15	47
AI2+	0 .. 10V	15	0	46
AI2-	-10 .. 0V	0	-15	45
AI3+	0 .. 10V	15	0	44
AI3-	-10 .. 0V	0	-15	43
AI4+	0 .. 10V	15	0	20
AI4-	-10 .. 0V	0	-15	17
AI5+	0 .. 10V	15	0	19
AI5-	-10 .. 0V	0	-15	21
AI6+	0 .. 10V	15	0	22
AI6-	-10 .. 0V	0	-15	23
AI7+	0 .. 10V	15	0	26
AI7-	-10 .. 0V	0	-15	24
CAN LOW				27
CAN HIGH				28
Sampling resolution - Base	50kHz / 0.5deg			
Sampling resolution - Advanced	200kHz / 0.1deg			
Max RPM	7000			
PROCESSOR				
CPU	Quad Core Cortex-A72; 64-bit SoC @1.5GHz			
RAM	2GB LPDDR4; 2400 SDRAM			
STORAGE	16GB			
OS	Linux Based			

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https://www.wminternational-engineering.com/products
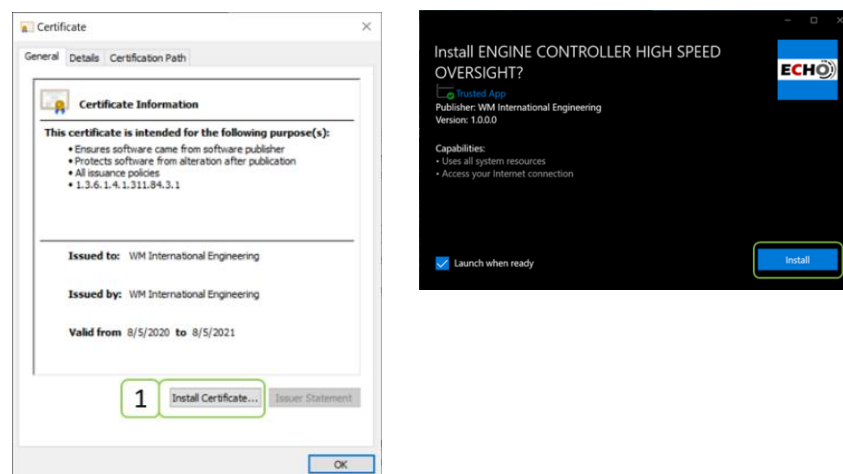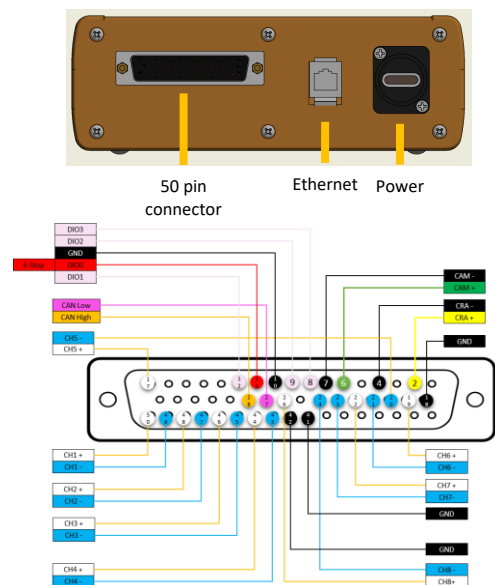
5 CONNECT AND RUN

Power up the **ECHO** box, connect it to the PC, and press the Play button.
If the connection is successful, status bar will indicate that **ECHO** is "Running".

The measure page allows the user to:
- ✓ to connect to **ECHO**,
- ✓ view/record data,
- ✓ calibrate combustion analysis parameters
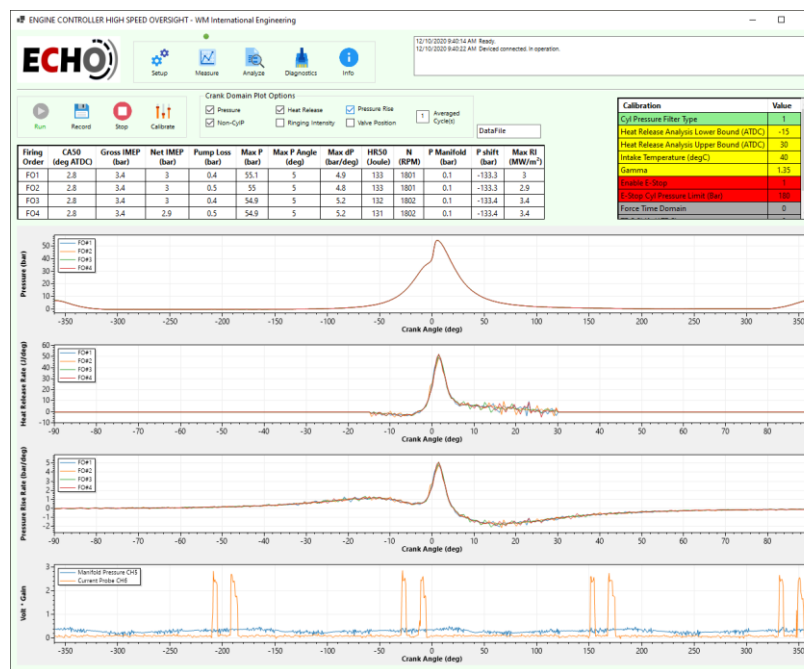
The setup page allows the user to:
- ✓ perform software update,
- ✓ change data file settings,
- ✓ view engine configuration
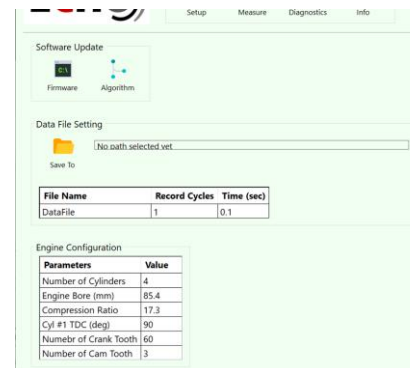
The diagnostic page allows the user to troubleshoot
- ✓ connection issues
- ✓ engine synchronization issues

6 MODIFY ANALYSIS CODE

Users can modify the default combustion analysis C source code
Analysis.c and upload to **ECHO** via the PC software:

- ➢ Press the **Algorithm** button on the **Setup page** as show here
- ➢ Select the **Analysis.c** file in popup window as shown
- ➢ Click "Open".

File will be uploaded to **ECHO** and recompiled with its embedded library.
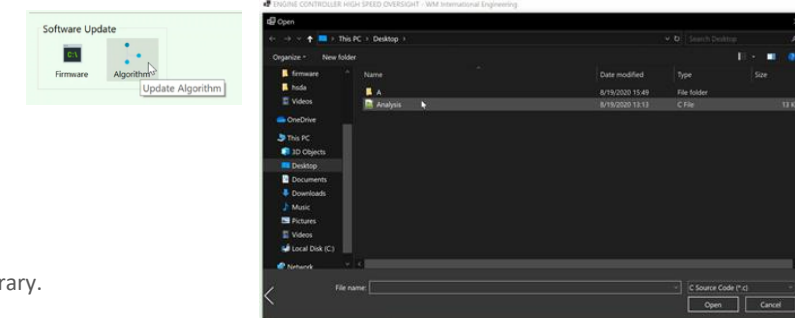
7 USER SPEFICIC SETTINGS

CAM and CRANK sensor
ECHO can be set up to process a wide variety of VRS and HALL effect sensors via
jumper settings within the box module. Please contact WM International with
your system requirements.

FILTER SETTINGS
The default filters applied are 25kHz. Filters are applied to limit signal noise.
FILTER SETTINGS may be adjusted per user request.